

FK 208Y

ON-OFF digital controller for static refrigerating units

Version 1.01 of 16th March 2005

File fk208y_eng_v1.01.pdf

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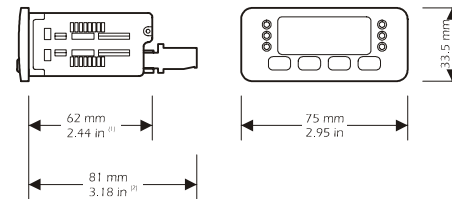
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ENGLISH

1 PREPARATIONS

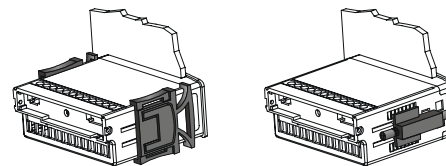
1.1 How to install the instrument

Panel mounting, panel cut out 71 x 29 mm (2.79 x 1.14 in), with click brackets (supplied by the builder) or screw brackets (by request).



(1) maximum depth with screw terminal blocks

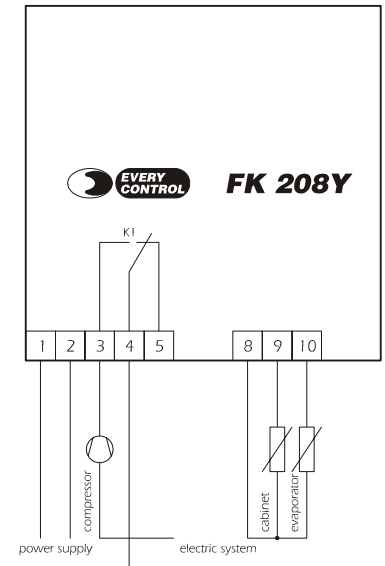
(2) maximum depth with extractable terminal blocks.



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installation with click brackets (on the left-hand side, supplied by the builder) and screw

brackets (on the right-hand side, by request); if you are using screw brackets, you have to moderate the clamping torque, in order not to damage the box and screw brackets.

1.2 Electrical connection



2 OPERATION

2.1 Preliminary information

During the normal operation the instrument shows the cabinet temperature.

2.2 How to silence the buzzer

If you have to silence the buzzer (optional):

▪ press

2.3 How to activate the defrost by hand

If you have to activate the defrost by hand:

▪ press for 4 s

Unless the evaporator temperature is below the defrost end temperature you have set with parameter d2, the defrost will not be activated.

3 WORKING SETPOINT

3.1 How to set the working setpoint

If you have to modify the working setpoint value:

▪ press and or ⁽³⁾

(3) you can set the working setpoint between the limits you have set with parameters r1 and r2.

4 CONFIGURATION PARAMETERS

4.1 How to set configuration parameters

Configuration parameters are arranged on two levels.

If you have to gain access the first level:

- press and for 4 s : the instrument will show **PA**

If you have to select a parameter:

- press or

If you have to modify the value of the parameter:

- press **set** and or

If you have to gain access the second level:

- gain access the first level
- press or for selecting **PA**
- press **set** and or for setting "**-19**"
- press and for 4 s : the instrument will show **P0**

If you have to quit the procedure:

- press and for 4 s or do not operate for about 60 s.

5 SIGNALS

5.1 Signals

LED	MEANING
	Compressor LED if it is lit, the compressor will be turned on if it flashes, a compressor delay will be running (look at parameters C0, C1, C2 and C4)
	Defrost LED if it is lit, the defrost will be running

6 ALARMS

6.1 Alarms

CODE	REASONS	REMEDIES	EFFECTS
E2 corrupted memory data	there is a corruption of the configuration data in the memory of the instrument	switch off the power supply of the instrument: unless the alarm disappears, you will have to change the instrument	<ul style="list-style-type: none"> you can not gain access the setting procedures the compressor will be turned off

E0 cabinet probe alarm	<ul style="list-style-type: none"> the kind of cabinet probe you have connected is not right the cabinet probe plays up the connection instrument-cabinet probe is wrong the cabinet temperature is outside the limits allowed by the working range of the instrument 	<ul style="list-style-type: none"> look at parameter /0 test the integrity of the probe test the instrument-probe connection test the temperature close to the probe (it has to be between the limits allowed by the working range) 	<ul style="list-style-type: none"> the compressor will be turned to the status you have set with parameter C3 if the defrost is running, it will immediately end the defrost will never be activated
E1 evaporator probe alarm	<ul style="list-style-type: none"> the kind of evaporator probe you have connected is not right the evaporator probe plays up the connection instrument-evaporator probe is wrong the evaporator temperature is outside the limits allowed by the working range of the instrument 	<ul style="list-style-type: none"> look at parameter /0 test the integrity of the probe test the instrument-probe connection test the temperature close to the probe (it has to be between the limits allowed by the working range) 	<ul style="list-style-type: none"> the defrost will end by time (parameter d3)
cabinet temperature lower or upper temperature alarm	<ul style="list-style-type: none"> the cabinet temperature is outside the limit you have set with parameter A1 or A2 	<ul style="list-style-type: none"> test the temperature close to the probe (look at parameters A0, A1 and A2) 	<ul style="list-style-type: none"> no effect

The instrument shows the indications above flashing and the buzzer (optional) utters an intermittent beep.

7 TECHNICAL DATA

7.1 Technical data

Box: self-extinguishing grey.

Size: 75 x 33.5 x 81 mm [2.95 x 1.31 x 3.18 in] the model with extractable terminal blocks, 75 x 33.5 x 62 mm [2.95 x 1.31 x 2.44 in] the model with screw terminal blocks.

Installation: panel mounting, panel cut out 71 x 29 mm [2.79 x 1.14 in], with click brackets (supplied by the builder) or screw brackets (by request).

Frontal protection: IP 65.

Connections: extractable terminal blocks with pitch 5 mm (0.19 in) for cables up to 2.5 mm² (0.38 sq in, power supply, inputs and output) or screw terminal blocks with pitch 5 mm (0.19 in) for cables up to 2.5 mm² (0.38 sq in, power supply, inputs and output).

Ambient temperature: from 0 to 55 °C [32 to 131 °F; 10 ... 90% of relative humidity without condensate].

Power supply: 230 Vac, 50/60 Hz, 1.5 VA.

Alarm buzzer: optional.

Measure inputs: 2 (cabinet and evaporator probe) for PTC or NTC probes.

Working range: from -50 to 99 °C [-58 to 210 °F] for PTC probe, from -40 to 99 °C [-40 to 210 °F] for NTC probe.

Setpoint range: from -99 to 99 °C [-99 to 99 °F].

Resolution: 1 °F with unit of measure in Fahrenheit, 1 °C with unit of measure in Celsius.

Display: one red LED 3-digit display 13.2 mm (0.51 in) high, output status indicator.

Outputs: one 10 A @ 250 Vac relay for one ½ HP @ 230 Vac compressor control (change-over contact).

Kind of defrost: stopping the compressor.

Defrost control: defrost interval, defrost end temperature and defrost maximum length (automatic and by hand).

8 WORKING SETPOINT AND CONFIGURATION PARAMETERS

8.1 Working setpoint

LABEL	MIN.	MAX.	U.M.	DEF.	WORKING SETPOINT
r1	r2	°C/°F ⁽⁴⁾	0	working setpoint	

8.2 First level parameters

LABEL	MIN.	MAX.	U.M.	DEF.	PASSWORD
PA	-99	99	—	0	password

LABEL	MIN.	MAX.	U.M.	DEF.	REGULATOR
r0	1	15	°C/°F ⁽⁴⁾	2	hysteresis (differential, it is relative to the working setpoint)

LABEL	MIN.	MAX.	U.M.	DEF.	DEFROST
dA	—	—	°C/°F ⁽⁴⁾	—	evaporator temperature showing

8.3 Second level parameters

LABEL	MIN.	MAX.	U.M.	DEF.	MEASURE INPUTS
/0	1	4	—	3	kind of probe (1 = PTC, 2 = reserved, 3 = NTC, 4 = reserved)
/1	-99	99	°C/°F ⁽⁴⁾	0	cabinet probe calibration (you have to set eight points to adjust one degree)
/6	-99	99	°C/°F ⁽⁴⁾	0	evaporator probe calibration (you have to set eight points to adjust one degree)
/8	0	1	—	1	temperature unit of measure (0 = Fahrenheit degree, 1 = Celsius degree)

LABEL	MIN.	MAX.	U.M.	DEF.	REGULATOR
r0	1	15	°C/°F ⁽⁴⁾	2	hysteresis (differential, it is relative to the working setpoint)
r1	-99	r2	°C/°F ⁽⁴⁾	-40	minimum value you can assign to the working setpoint
r2	r1	99	°C/°F ⁽⁴⁾	99	maximum value you can assign to the working setpoint

LABEL	MIN.	MAX.	U.M.	DEF.	COMPRESSOR PROTECTION
C0	0	15	min	0	minimum delay between you turn the instrument on and the first compressor activation
C1	0	15	min	5	minimum delay between two compressor activation in succession
C2	0	15	min	3	minimum delay between the compressor gets turned off and the following activation
C3	0	1	—	0	compressor status during the cabinet probe alarm (0 = it will be turned off, 1 = it will be turned on)
C4	0	1	—	0	fixed delay since the compressor gets turned on and off (1 = YES, for 3 s)

LABEL	MIN.	MAX.	U.M.	DEF.	DEFROST
d0	0	99	h	8	defrost interval ⁽⁵⁾ (0 = the defrost will never automatically be activated)
d2	-99	99	°C/°F ⁽⁴⁾	2	defrost end temperature (evaporator temperature)
d3	0	99	min	30	defrost maximum length (0 = the defrost will never be activated)
d4	0	1	—	0	defrost activation every time you turn the instrument on (1 = YES) ⁽⁵⁾
d5	0	99	min	0	delay between you turn the instrument on and the defrost activation (it is important if d4 = 1)
d6	0	1	—	1	freeze of the temperature showed by the instrument during the defrost (1 = YES) ⁽⁶⁾
d8	0	15	h	1	upper temperature alarm exclusion time since the end of the defrost (since the end of d3, it is important if A2 ≠ 0) ⁽⁷⁾
dA	—	—	°C/°F ⁽⁴⁾	—	evaporator temperature showing

LABEL	MIN.	MAX.	U.M.	DEF.	ALARMS
A0	1	15	°C/°F ⁽⁴⁾	2	hysteresis (differential, it is relative to A1 and A2, it is important if A1 and/or A2 ≠ 0)
A1	-99	0	°C/°F ⁽⁴⁾	-10	lower temperature alarm threshold (it is relative to the working setpoint, 0 = it will never be activated)
A2	0	99	°C/°F ⁽⁴⁾	10	upper temperature alarm threshold (it is relative to the working setpoint, 0 = it will never be activated)
A3	0	15	h	2	upper temperature alarm exclusion time since you turn the instrument on (it is important if A2 ≠ 0) ⁽⁷⁾
A6	0	240	min	5	temperature alarm exclusion time (it is important if A1 and/or A2 ≠ 0)

LABEL	MIN.	MAX.	U.M.	DEF.	RESERVED
L1	—	—	—	—	reserved
L2	—	—	—	—	reserved
L4	—	—	—	—	reserved

(4) the unit of measure depends on parameter /8

(5) unless the evaporator temperature is below the defrost end temperature you have set with parameter d2, the defrost will not be activated

(6) if at the moment of the defrost activation the cabinet temperature is below the value "working setpoint + r0", the instrument will not show temperatures above that value; if at the moment of the defrost activation the cabinet temperature is above the value "working setpoint + r0", the instrument will not show the increases of the temperature (if the increase takes place below the value "working setpoint + r0", look at the previous case); the instrument restores the normal operation once the defrost ends and the cabinet temperature falls below the freeze temperature

(7) if the lower temperature alarm takes place during the count of the delay, this last will be cleared.